

SOURCE SELECTION STATEMENT
FOR THE
CREW, ROBOTICS AND VEHICLE EQUIPMENT (CRAVE) CONTRACT
B-CRAVE-RESTRICTED
LYNDON B. JOHNSON SPACE CENTER

On December 8, 2004, I along with several officials from the Lyndon B. Johnson Space Center (JSC), met with members of the Source Evaluation Committee (SEC) appointed to evaluate proposals for the Crew, Robotics and Vehicle Equipment (CRAVE) procurement. The CRAVE contracts will provide design, development, testing, manufacturing, and evaluation and sustaining engineering necessary to certify, deliver and maintain Extravehicular Activity Equipment (EVA), Flight Crew Equipment (FCE), Crew Health and Conditioning Systems (CHeCS), Extravehicular Robotics (EVR) equipment, Environmental Control and Life Support (ECLS) equipment, and Active Thermal Control Systems (ATCS) equipment, including ground support equipment (GSE) in support of the Space Shuttle, the International Space Station (ISS), and advanced programs of Government-Furnished Equipment (GFE) for future human Space Flight programs. This effort includes the necessary labor, material, equipment, and facilities to accomplish the tasks required by this contract, including all necessary program, business management, engineering, technical and administrative skills necessary to accomplish the objectives and outcomes described within the contract.

The CRAVE procurement's stated goal is for multiple awards of Indefinite Delivery/ Indefinite Quantity (IDIQ) contracts, and is being conducted using two separate solicitations. This solicitation is restricted to competition among educational institutions, nonprofit institutions and Federally Funded Research and Development Centers (FFRDCs) that could potentially perform at least 51 percent of the CRAVE requirements for all Delivery Orders, and is known as "B CRAVE-Restricted." (The other CRAVE solicitation, 9-BH13-93-03-16P, which contains the same requirements, is for full and open competition, and is known as "A-CRAVE-Unrestricted.") After the CRAVE contracts are awarded, organizations that were awarded contracts under B-CRAVE will compete for delivery order awards with those organizations that were awarded contracts under A-CRAVE. In awarding these delivery orders, no special consideration will be given based on the contractor's organization type or business classification. The CRAVE acquisition will be conducted as a multiple award IDIQ-type procurement, and authorization to perform work under the CRAVE contracts will be through the issuance of Cost Plus Fixed Fee (CPFF) and Firm Fixed Price (FFP) delivery orders. The CRAVE contracts will have a base period of 5 years with no options. Contract performance is scheduled to begin on January 7, 2005.

For both the A-CRAVE and B-CRAVE, the requirement for a Draft Request for Proposal (RFP) was waived by the JSC Procurement Officer on February 6, 2004, and no pre-proposal conference was conducted. On May 25, 2004, the final RFP was posted on the Internet. Volume III of the proposal was initially due on June 18, 2004, and this date was extended to July 2, 2004. The remainder of the proposal was initially due on June 30, 2004, and was extended to July 15, 2004. Five proposals were submitted to the Government on June 30, 2004, in response to the

CRAVE solicitations, two under the A-CRAVE and three under the B-CRAVE. In response to the B-CRAVE solicitation, timely proposals were received from the following universities:

University of Alabama at Birmingham (Alabama)
Texas A & M University (TAMU)
University of Maryland (Maryland)

Prior to the issuance of the RFP, the SEB developed four Mission Suitability evaluation subfactors. The RFP described these subfactors and listed the relative importance and weighting of each as set forth below:

Technical Approach	500
Management Approach	300
Small Business/Small Disadvantaged Business Participation	100
Safety and Health Approach	100

In addition to Mission Suitability, the RFP identified, and the SEC evaluated, Cost and Past Performance. These were not numerically scored. The RFP also provided for a downward adjustment of offerors' Mission Suitability scores up to 300 points based on cost realism, which was defined as the difference between each offeror's proposed cost and the Government's evaluated probable cost for that proposal.

The RFP stated that the Factors of Mission Suitability and Past Performance, when combined, are significantly more important than Cost. As between each other, Mission Suitability is more important than Past Performance.

After a preliminary review of all proposals, the SEC determined that two of the three B-CRAVE proposals were acceptable. The proposal of Maryland, however, was found to not represent a reasonable effort to address the essential requirements of the RFP and clearly demonstrated that the offeror did not take the time to address the RFP requirements. The proposal was eliminated as unacceptable in accordance with the NASA Federal Acquisition Regulation Supplement 1815.305-70. This determination was made based on the proposal's failure to address numerous essential requirements of the RFP and the failure to clearly demonstrate an understanding of the B-CRAVE contract requirements. Maryland was notified by letter on September 13, 2004, that its proposal would not be considered further.

In descending order of Mission Suitability scores, the Board ranked the two B-CRAVE proposals as follows:

Alabama
TAMU

Alabama's proposal was rated as Good overall, with ratings of Good in Management Approach, Technical Approach, Safety and Health Approach, and Small and Small Disadvantaged Business Approach and Excellent in Past Performance. Although the Board identified several significant

strengths in the proposal, these were counterbalanced by two significant weaknesses and numerous weaknesses.

TAMU's proposal was rated Fair overall with ratings of Poor in Management and Fair in Technical Approach, Safety and Health Approach and Small and Small Disadvantaged Business Approach. TAMU received a deficiency in Management Approach. In addition, several significant strengths were noted, as well as several significant weaknesses. TAMU was rated Good in Past Performance.

After a preliminary review of the proposals, the SEC initially determined that both of the B-CRAVE proposals were acceptable, and at the completion of the initial evaluation, the Contracting Officer, determined the proposals of TAMU and Alabama to be in the competitive range. Following a briefing by the Committee, I approved the competitive range determination on September 10, 2004. The offerors were notified of these results by letter on September 15, 2004. Although the RFP stated that the SEC was authorized to make award(s) without discussions, evaluations of the Offeror's proposals resulted in the SEC's decision to hold discussions with all Offerors, for both A-CRAVE and B-CRAVE, within the competitive range. Letters were sent to each of the Offerors determined to be within the competitive range, and transmitted to them their proposal weaknesses, clarifications and cost questions identified during the SEC's initial evaluation, along with a scheduled date and agenda for discussions. Discussions focused on disclosing all weaknesses and ensuring the Government fully understood the specifics of each proposal and that each Offeror understood the specifics of the RFP. Discussions began on October 15, 2004, and concluded on November 5, 2004.

Requests for Final Proposal letters were provided to the Offerors on October 27, 2004, and Final Proposal revisions were received on November 8, 2004. The SEC completed its evaluation of the Offerors' final proposal revisions on November 17, 2004. For Alabama, the final evaluation determined that the two significant weaknesses had been corrected and that three weaknesses remained (18 weaknesses had been corrected). No additional strengths were added during the final evaluation. For TAMU, the final evaluation determined that the one deficiency in Management Approach for failing to submit a model contract that complied with the terms and conditions of the RFP had been corrected and that one significant weakness and three weaknesses remained (4 significant weaknesses and 25 weaknesses had been corrected). No additional strengths were added during the final evaluation. Following final proposal evaluation, it was clear from the Committee's findings that either Alabama or TAMU could be expected to perform the required services. No reservations were expressed regarding the ability of either Alabama or TAMU to perform the work, nor were any significant risks identified by the Committee regarding either of these offerors.

After hearing the Committee's presentation on December 8, 2004, I carefully reviewed the specific strengths and weaknesses of both Alabama's and TAMU's proposals. After examining the findings of the Committee in the context of the solicitation's stated goal, that multiple IDIQ contract awards were anticipated, and that all delivery orders were to be competed among contract recipients, with a minimum specified guaranteed work value amount of \$15,000, I determined that both Alabama and TAMU offered significant value in their proposals.

The following represents my analysis of the value to the Government provided by the two B-CRAVE proposals. I first focused on the Mission Suitability subfactors having the greatest weight, Management Approach and Technical Performance. In my review, I considered the relative value of all the findings to the Government.

MISSION SUITABILITY

Subfactors: Management and Technical Approach

Alabama's proposal of an engineering team with a wide range of hardware development skills, an extensive database of approved vendors, subcontractors and teaming partners, and an in-house fabrication capability that exceeds minimum requirements to produce a superior capability to provide quick and complete responses to the Government's needs, which often require short schedules, is of significant value to the Government. I also found value in Alabama's total compensation plan, proposed at a level that should ensure Alabama's ability to hire and retain a quality workforce to fulfill CRAVE requirements. In its response to Management Question No. 1, Alabama demonstrated an in-depth understanding of issues associated with the "Special Provision for Reprocurement Rights" clause, providing value to the Government in mitigating the risk of the vendor failing to supply the technology after a considerable investment in flight hardware, procedures and training time for the crew. In its response to Management Question No. 3, Alabama further demonstrated an understanding of all relevant technical and contractual issues, providing value to the Government in increasing the likelihood of the Government's finding the optimal solution with respect to technical, cost, schedule and contractual impacts for problems with CRAVE deliveries resulting from flight schedule slips.

Alabama indicated that it maintains technical laboratories and facilities for use during product development and testing, and that it is able to expand its capabilities beyond minimum requirements to provide end flight product development. Use of these facilities in performing Delivery Orders would provide significant value to the Government. I found that Alabama's quality management system, ANSI/ISO/ASQ Q9001-2000 registered, exceeds the B-CRAVE requirements, and provides significant value to the Government by reducing the need for Government oversight. I also found that Alabama's proposal to talk to the crew experienced with the specific piece of flight hardware when developing redesign solutions demonstrated an appropriate understanding of crew interface requirements, and provided value to the Government by increasing the likelihood that Alabama's designs will meet crew interface requirements. I further found value in Alabama's capability to retrieve powered time-critical payloads through a system with special payload accommodations. This capability provides significant value to the Government in increasing the likelihood of successful post-flight processing of time critical payloads and samples that need temperature controlled transportation.

Alabama's response to Technical Question No. 5 demonstrated a complete understanding of the issues associated with flying a prototype unit or accelerating the schedule of the development of a new technology. Such an understanding provides the value to the Government in that a competent offeror will be able to accomplish difficult adjustments to mission requirements and schedules. Alabama's response to Technical Work Package III demonstrates technical capability

for life support work that provides value to the Government in meeting or exceeding the CRAVE Environmental Control and Life Support Systems requirements. Alabama also provides value to the Government by demonstrating the capability to identify and manage risks associated with the B-CRAVE Statement of Work and Technical Work Packages identifying risk assessment in much greater detail than required. Alabama also proposed an effective Quality Assurance Plan, providing enough detail for every element of their Quality System which provides value to the Government in the assurance that appropriate quality functions will be performed in a manner that would reduce risks.

Under the subfactors of Management and Technical approach, TAMU proposed an organizational structure that will provide the resources of TAMU's university system which has established an advisory council that will dramatically enhance the Program Manager's effectiveness. TAMU's proposed organizational approach provides significant value to the Government in TAMU's expertise for the CRAVE contracts, and greatly enhances its ability to meet or exceed the CRAVE requirements. TAMU proposed a capability to train and certify personnel to NASA workmanship standards and processes which will greatly reduce the NASA resources required for training, and as such provides significant value to the Government. TAMU exhibited an effective management approach in the use of metrics for safety, financial, performance and quality, and I found value to the Government in the fact that TAMU would be able to effectively mitigate performance risks and avoid conflicts of interests relating to the CRAVE contract. TAMU's proposal identifies an effective approach to risk management that increases the likelihood of successfully mitigating risks and meeting CRAVE requirements. I found that TAMU's addressing risk assessment over and above the B-CRAVE requirements provides value to the Government in that it demonstrates an understanding of the emphasis NASA places on risk management tools and improves the likelihood of successfully mitigating risks and meeting CRAVE requirements.

Like Alabama, TAMU also has identified available facilities and equipment to be used to support the B-CRAVE requirements. TAMU has indicated that work on the B-CRAVE requirements will be performed near the main TAMU campus. This capability provides significant value to the Government in that TAMU's capability for in-house testing and access to other state-of-the-art facilities will greatly increase the efficiency of hardware fabrication and testing for CRAVE requirements. TAMU's extensive in-house radiation facilities provide value to the Government because they increase the efficiency of TAMU's ability to design radiation detection equipment and verify radiation hardening for electronic equipment. TAMU further demonstrated an understanding of requirements for developing hardware for operation in a space environment by addressing microgravity, extreme thermal cycles, vacuum, extreme mass and power limitations with high reliability requirements. This understanding is of considerable value to the Government in that it increases the likelihood of TAMU's providing successful technical solutions to CRAVE requirements.

Subfactor: Safety and Health Approach

In the subfactor of Safety and Health Approach, I examined the strengths assigned by the SEC to Alabama's safety and health programs, and note that Alabama understands the System Safety Plan requirements well enough to produce a comprehensive plan at the contract level, which

provides value to the Government. TAMU received a significant weakness in failing to demonstrate a comprehensive understanding of the System Safety Plan requirements.

Subfactor: Small Business/Small Disadvantaged Business Participation

In the subfactor of Small Business/Small Disadvantaged Business Participation, neither Alabama nor TAMU were assigned strengths by the SEC.

PAST PERFORMANCE

In the factor of Past Performance, I found significant strengths in Alabama's experiences in developing products in CRAVE technical areas, thereby increasing the likelihood of successful delivery of CRAVE requirements in all technical areas. Alabama demonstrated significant experience developing and building flight hardware for the International Space Station and the Space Shuttle, thereby providing significant value to the Government by increasing the potential for delivery of quality hardware. Alabama also showed significant experience in the use of Commercial Off The Shelf (COTS) designs, providing significant value to the Government in its ability to enhance efficiency, shorten schedule and increase the probability of successful flight crew equipment projects which often utilize COTS. Alabama also has successfully completed space flight hardware projects within budget and schedule, providing significant value to the Government in the high probability of continued successful performance on similar CRAVE projects. Several evaluations received from Alabama customers indicate that Alabama has a strong ability to control costs and is consistent in providing detailed cost and scheduled estimates, as well as timely impact assessments of scope changes. Comments from customers reflect that Alabama achieves cost control without sacrifice to technical performance. The SEC assigned Alabama significant strengths for its demonstrated successful quality system experience providing value to the Government by reducing risk and helping to assure delivery of quality products. The SEC also assigned Alabama numerous strengths for its demonstrated ability to successfully develop radiation detection equipment, for its successfully demonstrated understanding and implementation of operational requirements in design, for its technology experience directly related to CRAVE requirements, and for its in-house experience with machining exotic metallic materials--all providing value to the Government through its technology expertise. The SEC also assigned TAMU strengths for its demonstrated experience in developing products for a past Space Shuttle mission, offering value to the Government through its capability to develop experimental hardware for Space Shuttle missions.

COST

As stated above the factors of Mission Suitability and Past Performance, when combined, are significantly more important than Cost. The SEC evaluated all cost proposals consistently. Individualized working models were created for each offeror and validated as functional and separate files. The internal models used Government pre-established hours that were multiplied against the offerors proposed loaded direct labor rates. The resulting cost was considered the proposed cost for both the cost reimbursement and firm fixed price. The SEC did not adjust Alabama's or TAMU's Final Proposal Revision, and all cost elements were determined to be acceptable as proposed on the SEC's cost realism analysis which included the results of the audit

data received from Defense Contract Audit Agency. No adjustment to their Mission Suitability scores was therefore necessary. I considered that the resources proposed for both Alabama's and TAMU's approach for implementing the B-CRAVE effort (both labor and non-labor) were realistic for meeting the contract requirements. All offerors have unique technical and management approaches which are reflected in their proposed prices. All competitors offer value when prices are compared against strengths and weaknesses, and although price differences exist, the offerors' rates are realistic based on cost realism and price analysis.

In conclusion, based upon my analysis of all strengths for both offerors as discussed above, I determine that both universities offer value to the Government, and that based on the ability to award to multiple offerors as stated in the solicitation and the value that each offeror includes in its proposal, it is my decision to award a contract to the University of Alabama and Texas A & M University. In this procurement, an award to each would meet the goals of the solicitation and would be in the best interest of the Government.



Debra L. Johnson

Source Selection Authority

12/17/04